



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,245	03/23/2004	Yasunori Suzuki	250839US90	1768
22850	7590	08/11/2005		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER FLANAGAN, KRISTA M	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,245

Applicant(s)

SUZUKI ET AL.

Examiner

Krista M. Flanagan

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4 and 11 is/are rejected.
- 7) ☐ Claim(s) 2, 3 and 5-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 03/23/04, 06/23/04, 04/27/2005
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: IDS 04/27/05.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: “L_s” the local signal from the local oscillator.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: “21FCA”, “21FCP”, “21FC”, “C_{sl}”, and “C_{sf}”.
3. The drawings are objected to because reference characters “18A” and “18B” are reversed in figure 2 also, “21CP” and “21CA” are reversed in figure 8. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed

Art Unit: 2817

of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

4. The Examiner would like to note that a search report dated 15 April 2005 from the European Patent Office regarding application number EP 04 00 7008 is acknowledged.

5. The Examiner would like to note that related application, serial number 10/730,141 to Suzuki et al., is acknowledged and is referenced on the PTO-892.

Specification

6. The disclosure is objected to because of the following informalities:

- a. Page 11, line 25, it is the Examiner's belief that "a3A2" should be "13A2"
- b. Page 14, line 9, please add a space between "frequency converter" and "18"
- c. Page 15, line 3, it is the Examiner's belief that "13f3" should be "13F3".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

7. Claim 4 recites the limitation "nonlinear transfer path" in line 7 of the claim. There is insufficient antecedent basis for this limitation in the claim. It is the Examiner's belief that it should read "nonlinear path" with the word "transfer" omitted.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 11/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,472,934 to Pehlke.

10. Regarding claim 1, Pehlke discloses a feedback loop, 702, which controls the digital signal processor, 700, to adjust the amplitude information and correct for any voltage standing wave ratio reflection and add in any amplitude and phase predistortion. A digital to analog converter, 554, takes the signal from the DSP, 702, and frequency converts the signal by way of a quadrature modulating upconverter, 560, to an RF frequency for input into the power amplifier inputs 704, 706, and 708, in the Doherty amplifier. Pehlke fails to explicitly disclose predistortion by use of a power series model. However, Pehlke discloses the DSP, which generates all required signals for suppression of out of band noise at column 16, lines 62-67. Therefore the DSP in Pehlke would be functionally equivalent to those generated by the claimed power series model.

11. Regarding claim 11/1, which inherits all of the limitations of claim 1, claims use of a standard Doherty amplifier using a class C operation peak amplifier and a class B operation carrier amplifier. Pehlke does not disclose an amplifier using these classes, he discloses a Doherty amplifier, which comprises a peak amplifier and a carrier amplifier, which are class E. However, one could use the design of Pehlke with a 2 stage standard Doherty amplifier using a class C operation peak amplifier and a class B operation carrier amplifier without compromising the functionality of the claims.

Art Unit: 2817

Allowable Subject Matter

12. Claims 2, 3, 5-10, 11/2 (which inherits all of the limitations of claim 2) and 11/3 (which inherits all of the limitations of claim 3) are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krista M. Flanagan whose telephone number is (571) 272-2203. The examiner can normally be reached on Monday - Friday, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Flanagan
20050803


Robert Pascal
Supervisory Patent Examiner
Technology Center 2800